Epitomes

Important Advances in Clinical Medicine

Preventive Medicine and Public Health

The Scientific Board of the California Medical Association presents the following inventory of items of progress in preventive medicine and public health. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, research workers or scholars to stay abreast of these items of progress in preventive medicine and public health that have recently achieved a substantial degree of authoritative acceptance, whether in their own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Preventive Medicine and Public Health of the California Medical Association and the summaries were prepared under its direction.

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Short-term Chemotherapy for Tuberculosis

THE INTRODUCTION of rifampin and its combination with isoniazid as initial therapy has made it possible to successfully treat tuberculosis in its various manifestations for less than 18 to 24 months. Administering isoniazid, 300 mg, and rifampin, 600 mg, once a day by mouth converts 90% of sputum-positive patients to a negative status within three months. Almost all others will have negative sputum cultures by the end of six months. By giving isoniazid and rifampin for a minimum of nine months, with the proviso that the final six months of treatment be accompanied by negative sputum cultures for *Mycobacterium tuberculosis,* almost all newly diagnosed patients will complete treatment between 9 and 12 months. Monthly visits with sputum examinations for acid-fast bacilli help determine the precise duration of therapy. Adverse drug reactions to isoniazid and rifampin are minimal. These can be recognized by clinical assessment and liver function tests done monthly.

Primary drug resistance has been recognized among initial sputum isolates from immigrants from Latin-American (12%) and Asian-Pacific (15%) countries. For this reason, it is prudent to begin therapy in Hispanic and Asian patients by giving not only isoniazid and rifampin but also a third antituberculous drug, namely ethambutol hydrochloride, 15 to 25 mg per kg of body weight, or pyrazinamide, 1.5 grams, once a day by mouth. These drugs should be taken until drug susceptibility tests are reported. For those patients with organisms susceptible to isoniazid and rifampin, the third antituberculous drug can be discontinued; for the rest, triple drug therapy should be continued throughout the treatment period. Isoniazid should not be discontinued despite in vitro resistance as it has a therapeutic effect on tubercle bacilli in vivo.

Relapses or recurrence of positive cultures for *M tuberculosis* occurring after the completion of appropriate chemotherapy are infrequent following short-term chemotherapy. Almost all relapses occur during the six months after completion of therapy. The organisms that reappear under these circumstances have the same drug susceptibility patterns that were present before initial chemotherapy. Reinstitution of antituberculous chemotherapy for at least a year is usually successful.

Short-term chemotherapy is also applicable to those patients who, for a variety of reasons, do not or cannot take their daily medicine on a voluntary basis. By identifying those patients through an initial compliance assessment—that is, behavioral, cultural, psychologic and other life-style factors that are frequently associated with noncompliance—a treatment program consisting of intermittent supervised chemotherapy can be designed that will ensure a successful outcome. Isoniazid, 15 mg per kg, and rifampin, 600 mg, are administered twice a week by mouth by a responsible person (family member, clinic personnel, community worker or the like). Where there is concern regarding initial resistance to isoniazid, either ethambutol (50 mg per kg) or pyrazinamide (2 to 3 grams) is given in addition to the isoniazid and rifampin. A treatment period of 9 to 12 months will suffice provided that the sputum cul-

tures for acid-fast bacilli are consistently negative for the final 6 months. Despite the high incidence of patients with preexisting liver disease within the noncooperative group, adverse liver reactions due to isoniazid, rifampin, and pyrazinamide are remarkably infrequent.

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REFERENCES

American Thoracic Society: Guidelines for short-course tuberculosis chemotherapy. Am Rev Respir Dis 1980 Mar; 121:611-614

Dutt AK, Stead WW: Present chemotherapy for tuberculosis. J Infect Dis 1982 Nov; 146:698-704

Locks MO: Tuberculosis, chap 71, *In* Wehrle PF, Top FH Sr (Eds): Communicable and Infectious Diseases, 9th Ed. St Louis, CV Mosby, 1981, pp 670-730

Exposure of Expectant Mothers to Cytomegalovirus Infections

HUMAN CYTOMEGALOVIRUS (CMV) infections are common worldwide. The epidemiology of this virus has not been completely delineated but it is known that transmission from person to person requires intimate contact. Among adults, the primary route of transmission is by intimate (oral or sexual) contact. Most cytomegalovirus infections are asymptomatic or mild.

Infection with cytomegalovirus has particular significance for pregnant women. The virus can infect the fetus in utero following a primary infection in the mother and, unlike rubella, also by reactivation of latent maternal cytomegalovirus. The risk of manifest congenital disease at birth appears to be largely associated with a mother's first (or primary) infection during pregnancy but the relative contribution to fetal damage by reactivated maternal cytomegalovirus infections has yet to be defined. In the United States 0.5% to 2.2% of all newborns are congenitally infected as shown by viral excretion at birth but most of these infected infants show no clinical signs of impairment at delivery. About 10% of these infections (about 1 per 1,000 births) result in some overt congenital cytomegalovirus disease at birth, but some of the asymptomatic congenital infections may produce effects detectable only later in life.

The results of several studies suggest that from 3% to 28% of all pregnant women in the US shed cytomegalovirus from their cervix by the third trimester of pregnancy. The virus has also been detected in the breast milk of 13% of women with cytomegalovirus antibodies. Such viral shedding is thought to be due predominantly to the reactivation of latent infection during pregnancy. Infants born to mothers shedding this virus may be infected connatally—that is, during labor or at birth—or postnatally. Most connatal and postnatal infections, like those acquired in utero, are asymptomatic, but some of these infections may conceivably produce subtle effects, the long-term results of which have not been well documented. Studies in the US also indicate that up to 30% of all children acquire cytomegalovirus infections by 3 years of age. Avoiding or reducing the risk of exposure to cytomegalovirus is difficult because of the large number of asymptomatic virus shedders in the general population.

Whether women who provide care to any group of infants and children have a greater risk of acquiring a primary infection with this virus than women not so employed has not been established. The most important routes of cytomegalovirus transmission from children to adults are apparently via contact with urine or saliva of virus shedders, for example, through kissing or poor personal hygiene after handling soiled diapers. Thus, nursery and other child care staff who are in contact with known infected infants and who adhere to routine patient care practices such as handwashing should not be at increased risk of acquiring a cytomegalovirus infection.

Women of childbearing age should be informed that this virus is ubiquitous and that prevention of infection from infants and children in any setting (home or occupation) is best accomplished by observing good personal hygiene. These women should also be advised that this virus is of relatively low infectivity, and, in contrast to the transmission of rubella and rubeola infection, intimate contact is usually required to transmit it. Antibody testing programs for women who are routinely in close contact with children cannot be recommended at the present time, since there is no information to indicate (or suggest) that such a program would reduce the risk of congenital damage to infants infected with cytomegalovirus.

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REFERENCES

Alford CA, Stagno S, Pass RF, et al: Epidemiology of cytomegalovirus, *In* Nahmias AJ, Dowdle WR, Schinazi RF (Eds): The Human Herpesviruses—An Interdisciplinary Perspective. New York, Elsevier, 1981, pp 159-171

Exposure of women to cytomegalovirus infections in medical and educational facilities. California Morbidity Supplement No. 7. Berkeley, Calif, State Department of Health Services, Feb 25, 1983

Stagno S: Isolation precautions for patients with cytomegalovirus infection: An interview with Sergio Stagno. Pediatr Infect Dis 1982 May/Jun; 1:145-147

Office Treatment of Alcoholism

MOST PHYSICIANS have been trained in public hospitals to recognize alcoholism by a patient's end-stage liver disease or other serious sequelae of heavy drinking. Patients who are obviously alcoholic represent only 5% or so of those who will go on to die an average of ten years prematurely because of their alcohol-related problems.

The average alcoholic person is a blue-collar or white-collar worker or a homemaker who drinks too heavily on evenings or weekends or experiences short periods each year when alcohol problems escalate. In these persons, who compose 15% to 20% of the patients seen in practice, cirrhosis rarely develops (seen in only 15% of alcoholic persons), and they are unlikely to enter a physician's office in an intoxicated state. The fall of blood alcohol concentrations to zero on an almost daily basis results in a moderate to mild withdrawal syndrome that, for 95% of these persons, causes tremor, anxiety and a flulike feeling.

Recognition of this average middle-class alcoholic person is important to clinicians because such patients are not likely to respond in a predictable way to therapeutic intervention if they continue drinking. Patients usually have nonspecific complaints, perhaps request a physical examination, and are likely to have mild hy-